

BOOK REVIEWS

APPLICATION OF GEOGRAPHIC INFORMATION SYSTEMS IN HYDROLOGY AND WATER RESOURCES MANAGEMENT edited by K. Kovar and H. P. Nachtnebel, International Association of Hydrological Sciences, Publication No. 211, IAHS Press, Wallingford, 1993. No. of pages: ix + 693. Price: £53.34 (\$80). ISBN 0-947571-48-5.

This volume is yet another state-of-the-art, 'hot off the press', IAHS publication. The quality of reproduction and presentation is excellent, an important requirement given that GIS is visually stimulating and colourful by its very nature. I can see this text being of interest to a wide variety of readers; in particular, it will be of use to research students and other researchers new to GIS. The book gives readers the chance to peruse the options and choose which GIS strategy will best suit their needs. The papers explore a wide range of issues with different goals, scales and problems. For any hydrologist or water resources manager, a quick look through the book should bring them up to date with recent GIS advances; in fact, perhaps the book could even occupy a place on the reference shelves.

The book contains eight sections, with GIS described in relation to the following issues: decision support and expert systems; remote sensing; digital terrain analysis; GIS in three and four dimensions; hydrological models; water and environmental health; surface water systems; and finally, applications to groundwater systems. These headings reflect the range of the papers within the

book, but few of the papers truly fit into only one section; the overlap of emphasis among the papers means that they could easily fit into any section. Hence, readers are advised to check through the whole book in order to find the papers relevant to their own interest. The papers, in general, give a good insight into the software and hardware options used, and most papers have a useful reference list.

However, there are certain reservations that must be mentioned. The first is that a number of the papers are too short, and indeed some are so brief that there is no real substance to them. Certain of the papers have an air of rather slick salesmanship, which personally I find detracts from the scientific quality of the volume. There is also a general criticism of GIS to be made, and this can be applied to this compilation. The criticism is perfectly expressed in the paper by Grayson *et al.* on page 83 of this volume:

The sophisticated graphics and data handling features of GIS can be used to seduce the user into an unrealistic sense of model accuracy.

This book is therefore a good guide to up-to-date GIS usage in hydrology and water resources, but it is not a GIS bible and the reader should maintain a critical eye.

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SEDIMENT PROBLEMS: STRATEGIES FOR MONITORING, PREDICTION AND CONTROL edited by R. F. Hadley and T. Mizuyama, International Association of Hydrological Sciences, Publication No. 217, IAHS Press, Wallingford, 1993. No. of pages: viii + 284. Price: £40.00. ISBN 0-947571-78-7.

Well over 200 of the famous IAHS 'red books' have now appeared, the first in 1924, and around eight new ones emerge each year. The instructions for editors of IAHS proceedings include a gentle forewarning that symposium papers may, on average, be of a lower standard than those accepted by journals, yet this particular contribution from the IAHS International Commission on Continental Erosion (ICCE) has much to offer. The

volume—the proceedings of the July 1993 conference in Yokohama—contains 31 papers grouped into six sections: 1. Erosion and Sediment Yield; 2. Landslides and Pyroclastic Flows; 3. Deposition Processes in Reservoirs; 4. Modelling and Monitoring of Sedimentation and Erosion Processes; 5. Soil Erosion, Sediment Losses and Drainage Basin Characteristics; 6. Monitoring Processes of Erosion and Sediment Transport.

A number of highlights emerged for this reviewer. The volume opens with a neat comparison by Simanton *et al.* of three methods of monitoring channel sediment transport in semiarid Arizona. In Section 2, Onda shows clearly the importance of hillslope hydrological processes, rather than regolith shear strength, in controlling the occurrence of shallow landslides in central Japan. Recent changes in catchment erosion and reservoir